CLAIMS

1. An electric field control material including a polymer matrix in which is dispersed a so-called non-linear filler having non-linear electric resistance properties, characterized in that the non-linear filler includes at least 97% by weight of zinc oxide as a homogeneous powder, and less than 3% by weight of at least one metal oxide as traces.

2. The material according to claim 1, characterized in that the non-linear filler includes less than 99.8% by weight of the zinc oxide as a homogenous powder.

3. The material according to any of claims 1 or 2, characterized in that the grains composing the zinc oxide powder of the non-linear filler have dimensions in majority less than 50 μm, and preferably less than 10 μm.

4. The material according to any of claims 1 to 3, characterized in that each metal oxide is selected from lead oxide, cadmium oxide, iron(III) oxide, copper oxide and manganese oxide.

5. The material according to any of claims 1 to 4, characterized in that the zinc oxide of the non-linear filler is doped with at least one non-metal element.

6. The material according to claim 5, characterized in that each non-metal element is sulphur or boron.

7. The material according to any of claims 1 to 6, characterized in that it includes a so-called linear filler having linear electric resistance properties.

8. The material according to claim 7, characterized in that the volume of the linear filler accounts for less than 25% of the volume of the non-linear filler.

9. The material according to any of claims 1 to 8, characterized in that it includes an insulating filler.

10. The material according to claims 9, characterized in that the insulating filler accounts for less than 10% by volume of said material.

11. The material according to any of claims 1 to 10, characterized in that the non-linear and if necessary the linear filler volume substantially accounts for 5 to 60% of the volume of said material, preferably from 15 to 40% by volume.

12. The material according to any of claims 1 to 11, characterized in that the zinc oxide has a direct current resistivity which is less than 10^9 Ω.m and preferably less than 10^8 Ω.m.

13. A termination (1) for an electric cable (2), characterized in that it includes at least one electric field distributor element (3), consisting of a material according to any of the preceding claims.

14. A connecting device for electrical cables, characterized in that it includes at least one electric field distributor element consisting of material according to any of claims 1 to 12.

15. A current limiting device, characterized in that it includes at least one PTC effect element, consisting of a material according to any of claims 1 to 12.

16. A power cable, characterized in that it includes at least one electric field distributor element consisting of material according to any of claims 1 to 12.

17. Self-regulating heating cable, characterized in that it includes at least one PTC effect heating element consisting of material according to any of claims 1 to 12.